



Call for Proposals to:

**Create and apply an evaluation framework for
the National Decision Support Programme**

Issued: 6th December 2017

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1. Purpose

The Digital Health & Care Institute, in collaboration with and the Scottish Government eHealth Division, is issuing this call for proposals to:

1. **Develop an evaluation framework** to enable Scotland's health and social care to measure and optimise the impact of developments delivered through the national Decision Support Roadmap.
2. Apply this framework to a range of key developments currently in progress.
3. In collaboration with Scottish Government and NHS Scotland leads in eHealth, **make recommendations on how to implement the framework on an ongoing basis** to support continuous evaluation and improvement of decision support. This will include recommendations on the services and resourcing required to support evaluation; governance structures and processes; and how to address barriers and enablers.

The suggested approach is an evaluation framework based on a theory of change expressed as an outcomes chain, combined with contribution analysis. However, bidders may suggest additional or alternative evaluation methods.

2. Background

2.1 Decision Support Roadmap

The Scottish Government eHealth Division produced the national Decision Support (DS) Roadmap for NHS Scotland in 2015 to support implementation of the decision support objectives within the national eHealth Strategy¹.

2.2 Scope of decision support

The Roadmap defines a spectrum of decision support tools and delivery channels. These tools range from informational resources – e.g. formularies, guidance, evidence summaries – to inference engines based on algorithms, machine learning, Bayesian models and predictive analytics. Delivery channels include web and mobile delivery, and context-sensitive, patient-specific links integrated in electronic health record systems. The evidence shows that this context-sensitive delivery of decision support has the highest impact on clinical practice and patient outcomes.

2.3 Work programme

The Roadmap sets out a phased programme of work to realise the benefits of decision support in reducing waste, variation and harm and in transforming delivery of care.

¹ <http://www.gov.scot/Publications/2016/02/8699>

Phase 1: 2016-17: Demonstrator projects.

These were designed to build clinical and policy-level engagement by showing how decision support can contribute to healthcare priorities, including patient safety, shifting the balance of care into the community and shared decision-making. Key projects in this phase included:

- **Development of mobile decision support apps** These included antimicrobial prescribing, management of polypharmacy, venous thromboembolism risk assessment, maternal risk assessment, and NHS Board clinical handbooks.
- **Linking a webpage with access to local and national informational decision support resources** to the 'TrakCare' electronic health record system used in secondary care.
- **Procurement of a national decision support rules (algorithms) engine, to integrate into clinical and care systems.** This involved producing a detailed specification and conducting a competitive European tender process. The contract has been awarded to Cambio Healthcare Systems. Initially these rules are being evaluated in early adopter projects in primary care, with the intention to roll it out nationally following the evaluation.

Phase 2: 2017-19 Developing national decision support infrastructure

The focus is on creating a coherent infrastructure to enable consistent, equitable delivery of decision support tools across Scotland's health and social care. Key developments include:

a) **A proof of concept of a technical platform for creating and delivering decision support tools.** This includes delivery through web and mobile channels and through integration with clinical systems. The details of this infrastructure are described in Appendix 2. This platform will connect:

- The rules engine procured from Cambio.
- A knowledge base to provide consistency in decision support content.
- A content management and software development toolkit.
- A mobile app and web delivery platform, underpinned by a quality assurance framework.
- Interfaces with health record systems.

b) **Applying and evaluating the decision support tools provided by this infrastructure in early adopter projects.** These projects will contribute to the transformational priorities outlined in the Health and Social Care Delivery Plan², Clinical Strategy, Primary Care Strategy and Realistic Medicine^{3 4}:

- Increased shared decision-making based on outcomes that matter to the individual in all care settings.

² <http://www.gov.scot/Publications/2016/12/4275/1>

³ <http://www.gov.scot/Publications/2017/02/4013>

⁴ <http://www.gov.scot/Publications/2016/01/3745>

- Self-management and enablement.
- More personalised care provided closer to home or in a homely setting.
- A clear focus on quality and reducing unwarranted variation.

c) **Developing workforce skills in delivering and using decision support tools effectively.**

d) **Refreshing the Decision Support Roadmap** to reflect changes in the health and social care environment since it was originally produced in early 2015. **Phase 3: Implementation**

Phase 3 will involve national roll-out of the decision support infrastructure evaluated during Phase 2. The intention is that this national roll-out will involve two key strands of work:

- **From November 2018**, beginning national roll-out of the Cambio decision support rules platform following the evaluation of the demonstrators.
- **From May 2019**, national roll-out of the wider national decision support infrastructure, following its evaluation in the proof of concept phase.

3. Specification

3.1 Summary of requirements

Requirement 1: Create an evaluation framework that:

- a) Measures the impact of the decision support developments emanating from the Decision Support Roadmap.
- b) Provides guidance on how to address barriers and risks that impede delivery of the full potential of decision support.
- c) Can be continuously refined and adapted on an iterative basis to reflect the learning about barriers and facilitators of impact.

Requirement 2: Apply this framework to decision support developments arising from the Roadmap, up to May 2019. Section 5.2 below describes the range of decision support developments.

Requirement 3: Produce a report on impact of these decision support developments, highlighting the barriers and enablers to maximising impact of decision support.

Requirement 4: Define the service model and resourcing required to continue to evaluate impact of decision support and to apply the learning from evaluation to support continuous improvement in quality of decision support solutions and their implementation.

3.2 Deliverables

Deliverable 1: Evaluation framework for decision support solutions in NHS Scotland, including:

- a) Rationale for choice of evaluation methodology, with and explanation of other methodologies considered and why these were not selected.
- b) A picture of what success will look like for decision support at each stage of delivering impact.
- c) Indicators, with associated data sources and data gathering methods.
- d) Insights into risks, barriers and facilitators to maximising impact, and guidance on how to manage these.

This framework will have been developed on an iterative basis through learning from applying it to decision support developments during 2017-19.

Deliverable 2: Report on impact of the decision support developments delivered through the Decision Support Roadmap. This should include analysis of the risks, barriers and enablers which influence successful implementation.

Deliverable 3: Recommendations on the service model for application of the evaluation framework on an on-going basis, to continuously monitor and maximise impact of decision support. This will include governance arrangements, resource requirements and management of key risks, barriers and enablers.

3.3 Scope

3.3.1 A pragmatic focus is required throughout this project. The priority is to develop and apply a practical working tool that:

- a) Can be used effectively in the complex health and social care environment, with all the competing variables and influences that are beyond the control of decision support providers.
- b) Can realistically be used in practice by busy health and care professionals without a major requirement for new resource or exercise.

3.3.2 The evaluation framework should be applied to:

- a) Decision support developments which have already been delivered as part of Phase 1 of the Roadmap.
- b) Developments currently planned or underway as part of Phase 2 of the Roadmap.
- c) Implementation of Phase 3 of the Roadmap, intended to start from November 2018.

Examples of developments in each of these phases include:

Already delivered in Phase 1:

a) Pilot of a rules-based platform with SCI-Diabetes in NHS Tayside and West Lothian. This has already been evaluated using an outcomes chain approach. The project commissioned through the current tender will:

- integrate the results of this evaluation into the overall evaluation report.
- Incorporate the learning from this evaluation into the design of the new evaluation framework.

b) Mobile apps for:

- Antimicrobial prescribing
- Polypharmacy management by healthcare professionals

c) Web page with access to informational decision support resources (evidence summaries, medicines information resources), linked with the 'TrakCare' electronic health record system in secondary care.

Delivery in progress (across phase 1 and phase 2)

d) Mobile apps for:

- Venous thromboembolism risk assessment among inpatients.
- NHS Board clinical handbooks, based on the principle of re-using and adapting existing content.
- Polypharmacy app for shared decision-making by patients and professionals.
- Maternal risk assessment app to support shared decision-making by patients and professionals.

e) Implementation of the Cambio decision support rules (algorithms) engine

This algorithms engine has been procured by Scottish Government and NHS National Services Scotland for national use through a competitive tendering process from Cambio Healthcare Ltd. This rules engine enables NHS Scotland and social care partners to construct algorithms based on guidelines and research evidence. These algorithms interact with patient data when an individual patient record is opened. The engine then presents the clinician – and potentially the patient – with patient-specific, evidence-based prompts and recommendations in the context of that individual record. The evidence shows that this patient-specific, proactive approach is the form of decision support with the highest impact on clinician practice and patient outcomes.

Importantly, the Cambio algorithms engine is system-agnostic. This means that it can use the same bank of evidence-based algorithms to provide decision support to primary and secondary care systems and to patient-facing portals.

This algorithms engine is being evaluated in a simulation environment, and will form a key part of the Digital Health and Care Institute's overarching simulation environment for technology-enabled models of care. For the purposes of evaluation, this algorithms engine will be integrated with the EMIS-PCS clinical system to deliver decision support in three priority areas:

- Shared decision-making for people with multiple conditions, taking multiple medicines.
- Implementation of the new national pathways for gastrointestinal conditions, including differential diagnosis of Coeliac Disease, Irritable Bowel Syndrome, Inflammatory Bowel Disease, and improving early detection of coeliac disease.
- Implementation of the new national pathway for management of chronic pain.

Following evaluation of in these priority areas, the business case will be made for rolling out this decision support algorithms engine nationally from November 2018.

f) Delivery of a proof of concept of the national coherent decision support infrastructure which forms a focus for phase 2 of the Decision Support Roadmap (see section 2.3 above and Appendix 2)

This proof of concept will form a key part of the Digital Health & Care Institute's Simulation and Demonstration Environment.

3.3.3 The evaluation framework should align with, and feed into, the higher-level evaluation of the Primary Care Strategy. This evaluation is being conducted by the Scottish School of Primary Care. The evaluation approach uses an outcomes chain methodology, based on a theory of change.

4. Timescales

Indicative timescales for this development are as follows:

Issue call for proposals: 6th December 2017

Proposal deadline: 5th January 2018

Award grant: January 2018

Evaluation project starts: January 2018

First evaluation report on primary care pilot: End of June 2018

Evaluation of first phase of national roll-out of decision support in primary care: End of May 2019 (subject to success of business case for national implementation to start from November 2018)

Regular evaluation reports on decision support programme as a whole – March 2018 to May 2019

Summative evaluation report on overall decision support programme and recommendations for future evaluation approach: March 2019.

5. Skills required

It is essential that the evaluation framework produced through this initiative is a practical working tool which can be used by busy health and social care professionals without a major requirement for new resource and expertise. The successful bidder must therefore be able to show ability to translate complex academic research approaches into practical working tools.

The supplier will also need to offer, either directly, or through engagement with third parties, a combination of experience and expertise in:

- a) Evaluation of complex interventions, including realistic evaluation methods and use of Theory of Change approaches.
- b) Health informatics, including design and delivery of informatics architecture and digital solutions.
- c) Quality improvement, implementation science and change management.
- d) Stakeholder consultation and requirements analysis – including patients and the public as well as health and social care professionals.
- e) Engaging with eHealth and digital health and social care strategic developments at national level.

6. Method of Approach

6.1 It is suggested that suppliers consider using a Theory of Change⁵ approach, visualised as an outcomes chain, and accompanied by Contribution Analysis⁶. Some of the reasons for recommending this methodology, and an illustration of its application, are outlined in Appendix 2. Bidders who wish to suggest alternative or additional methods should demonstrate how these methods support the arguments set out in appendix 2, and why they believe they are superior, or complementary to, the suggested methodology.

6.2 In terms of ways of working, suppliers will be required to

- Work in close partnership with the Programme Manager for Decision Support in the Scottish Government eHealth team, and with key stakeholders for the individual work strands within this programme. This includes:
 - Clinical leads and reference groups/ steering groups for individual projects.
 - Academic researchers already affiliated with two of the projects within the Decision Support Programme, who have worked on impact evaluation within these projects.

⁵ Patton MQ. Developmental evaluation: applying complexity concepts to enhance innovation and use. New York: Guilford Press; 2011.

⁶ Mayne J. Contribution Analysis: An approach to exploring cause and effect: ILAC Institutional learning and Change Institute; 2008.

- **Build on and link to existing work and** products wherever possible.

This includes:

- Strategic plans and reports which set out the intended benefits of decision support developments.
- Existing evaluations and evaluation frameworks using the outcomes chain and contribution analysis approaches – e.g. for the diabetes decision support project referred to in 3.3.2 a) above.
- Aligning with related evaluation work in digital health and care and wider service transformation – e.g. the evaluation of the Primary Care Strategy, and of the Primary Care Digital Services Programme; the evaluation of the Digital Health and Care Institute’s programme of digital innovation.

c) Work to agile, iterative development principles.

This will involve regular review and adaptation of the framework based on formative evaluation throughout the project. Based on the results of evaluation as they emerge, the supplier will recommend improvements key aspects of delivery such as: product design; implementation methodology; addressing critical barriers and risks.

7. Budget

The total budget available for this project is £50,000, excluding VAT.

8. Response

You are invited to respond to this document with the following information:

8.1 Your proposals for delivering on:

The requirements, scope and deliverables described in section 3, and the Method of Approach requirements set out in section 6. You should detail:

- a) your understanding of the main issues to be addressed.
- b) how you intend to deliver the services required.
- c) the methodology you propose to use
- d) how you will work in collaboration with key leads and stakeholders.

8.2 The expertise and experience of the team undertaking the work, referencing the skills detailed in section 5. This should include CV[s] and statement of availability of the individual/s who will undertake the work.

8.3 Summaries of similar work undertaken, including contact information (name and telephone number or email address) for at least one reference.

8.4 Details of risks identified, and how these will be mitigated.

8.5 A realistic timetable of activities, including contingency management, to meet the timescales outlined in section 4.

8.6 A breakdown of costs, including any expenses.

[Response proposals are to be submitted through the Digital Health & Care Website here.](#)

If you encounter any problems or require assistance please contact support@dhi-scotland.com

To assist with the completion of your response, you may contact ann.wales@gov.scot for further information.

9. Evaluation

Proposals will be evaluated against each other in an objective manner. The Evaluation Panel will score each Bidder's response using the criteria shown in the following table.

The Bidder(s) selected will be chosen based on the best value for money. This means suitable quality, delivery, level of risk and response to customer needs at best price.

<u>Criteria</u>	<u>Description</u>	<u>Weighting</u>
Understanding the purpose of the work, context and background and proposes a methodology that meets all the requirements of the tender specification See Section 8.1 a)-d)	The proposal clearly demonstrates understanding of the context of this project, the strategic and policy drivers, and how it will contribute to transformation of health and social care to deliver better outcomes for patients. Proposal demonstrates that all the requirements of the specification have been addressed and understood and that the proposed methodology is appropriate and capable of successfully delivering the project.	40%
Relevant skills and expertise of team to be appointed to deliver the project See Section 8.2	Proposal demonstrates availability of the required combination of expertise and experience among team members to be appointed to the project.	15%

Experience and reputation in undertaking similar work See Section 8.3	Proposal demonstrates evidence of previous work undertaken in the past 3 years <u>relevant to this project</u> including the names(s) of clients who can be approached for comments.	10%
Timetable See Section 8.4	The proposal provides a detailed timetable of events to ensure that deadlines can be met and explicitly identifies any contingency.	10%
Risk Management and Quality Assurance. See Section 8.5	The proposal provides evidence that the main risks involved with the project have been identified and adequately addressed. Details of the bidder's risk management and quality assurance methodology are also outlined.	5%
Price See Section 8.6	The proposal is competitively priced and represents good value in the context of the goods/services to be delivered over the life of the contract. Costs are clearly demonstrated and justified. Best value bids will demonstrate an appropriate combination of cost and quality.	20%

As part of the tender evaluation process short listed Bidders may be invited to provide a presentation to the Evaluation Panel or interview to demonstrate their understanding of the project.

The following scoring convention will be used to assess each of the responses to the above quality questions.

Score	Descriptor
4	Excellent response - is excellent overall and will include a balance of completely relevant elements of the Contract as specified (but not limited to the specifications) <i>The response is comprehensive, unambiguous and demonstrates a thorough understanding of the requirement and provides details of how the requirement will be met in full</i>
3	Good response - is relevant and will include a balance of elements of the Contract as specified (but not limited to the specifications) <i>The response is sufficiently detailed to demonstrate a good understanding and provides details on how the requirements will be fulfilled</i>
2	Acceptable response - will include some elements of the Contract as specified (but not limited to the specifications) <i>The response addresses a broad understanding of the requirement but lacks details on how the requirement will be fulfilled</i>

1	<p>Poor response - is partially relevant and will include few elements of the Contract as specified (but not limited to the specifications)</p> <p><i>The response addresses some elements of the requirement but contains insufficient/limited detail or explanation to demonstrate how the requirement will be fulfilled</i></p>
0	<p>Unacceptable - Nil or inadequate response</p> <p><i>Fails to demonstrate an ability to meet the requirement</i></p>

The Evaluation Panel reserves the right to recommend that if the score for any one criterion is “0”, that the Contractor not be recommended. That is, they reserve the right to veto a Contractor if it does not meet at all any one of the criteria.

Appendix 1: Overview of decision support infrastructure

1.1 The successful supplier will deliver a national decision support infrastructure that actualises the architecture shown in Figure 1 below. This infrastructure will comprise three elements:

- **Element 1: A single “go-to” place to access evidence-based mobile apps and web resources to support frontline decision-making by health and social care practitioners.**
- **Element 2: A knowledge base of re-usable content, and a suite of development tools, to enable internal and external developers to create quality assured decision support.**
- **Element 3: Data exchange interfaces with key existing systems:**
 - a) The national decision support rules and reporting platform,
 - b) Analytics and machine learning systems that convert clinical and care data into decision support algorithms.
 - c) Clinical and care systems, so that decision support recommendations can be embedded in these systems.

1.2 Each of these elements is described in summary form below.

Element 1: A single “go-to” place to access evidence-based mobile apps and web resources to support frontline decision-making by health and social care practitioners.

This will be a single website providing quick, easy, user-friendly access to decision support through multiple delivery channels:

- Distilled, summarised evidence for decision-making – including local and national guidelines and protocols, pathways, key practice points, checklists, action summaries and other resources.
- A delivery platform for mobile apps which have been reviewed through the quality assurance framework developed by NHS Scotland.
- Web-based decision support and other delivery formats.

This “Go-to” place will include decision support resources created using the tools described under Element 2 below. It will also signpost resources from external sources.

Element 2: A knowledge base of re-usable content, and a suite of development tools, to enable internal and external developers to create quality assured decision support.

This element comprises:

- a) **A single knowledge base** which houses and manages two types of content:
 - Quality assured evidence which feeds into the “go-to” website described in Element 1 above, and provides content for new decision support resources created using the development tools outlined below.

- A database of re-usable content and functional components which can be built into different decision support tools and adapted for different audiences and contexts.

The knowledge base will be supported by tools for structured indexing, metadata management, categorisation and presentation of the actionable knowledge products and widgets housed or signposted by the knowledge base.

b) Suite of decision support development tools

These tools will enable creation of consistent, high quality decision support tools through:

- Managing and publishing content in web, mobile and other formats. This includes re-use and customisation of the content held in the knowledge base. It includes authoring and editing of new content.
- Creation of decision support tools in web, mobile and other formats. This includes creation of calculators, decision trees, pathways and other key decision support functionality as indicated by stakeholder consultation.
- Customisable mobile app suites that enable users to combine content and functional components from the knowledge base into a tailored app package that meets their personal requirements or the needs of a particular audience. For example, junior doctors want to bring together the calculators, formularies and guidance they use most frequently into one place, rather than accessing multiple apps.

Element 3: Data exchange interfaces with key existing systems:

a) Interfaces with the national decision support rules and reporting platform,

NHS Scotland has selected Cambio Healthcare Ltd to provide the national decision support rules platform and reporting tool to measure impact of decision support on practice and outcomes. More detail on this platform is provided in section xxx below. The supplier for this tender will work with Cambio to ensure that:

- The evidence in the knowledge base feeds into the decision support rules in the Cambio platform.
- The decision support rules housed in the Cambio platform feed into the web and mobile decision support tools.

b) Interfaces with analytics and machine learning systems that convert clinical and care data into decision support algorithms.

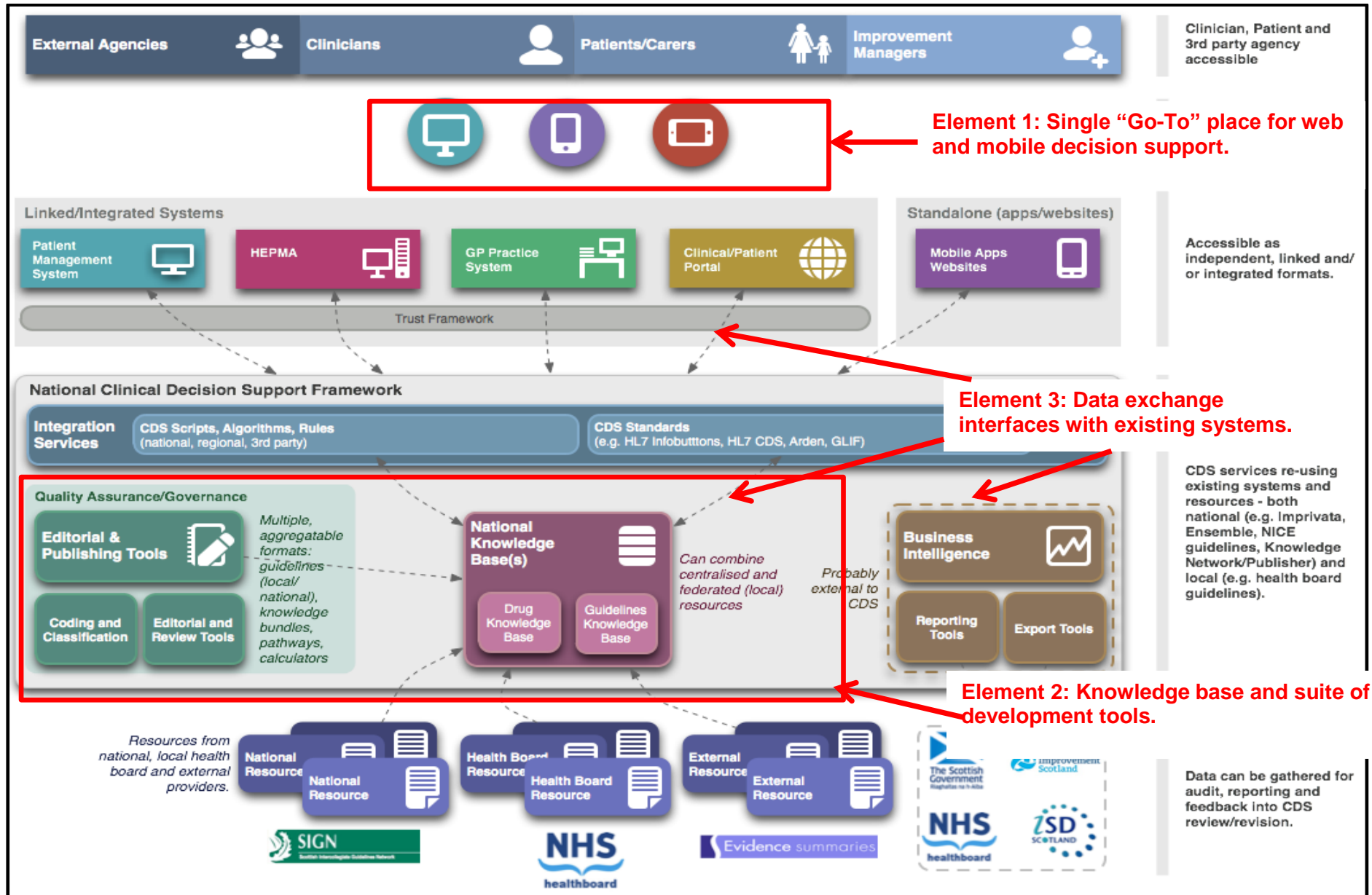
A range of systems in NHS National Services Scotland and other organisations are delivering descriptive and predictive analytics on large datasets such as SCI-Diabetes, infection control data the NHS Greater Glasgow and Clyde Safe Haven. These systems deliver algorithms that can inform decision support. This

project will create interfaces with these analytics systems so that the algorithms can be accessed on a “Do it Once for Scotland” basis through this decision support infrastructure.

c) *Interfaces with clinical and care systems*

The successful supplier will work with Cambio to devise low-effort approaches to embed recommendations based on the rules in the Cambio platform through clinical and care systems. They will also develop other approaches to linking decision support directly into these systems – e.g. hyperlinks to key evidence sources, embedded searches, Infobutton-type solutions, [SMART apps](#).

Figure 1: Target architecture as defined in Decision Support Roadmap



Appendix 2: Suggested Evaluation Methodology

Proposed methodology - Outcomes Chain and Contribution Analysis

The proposed approach to impact evaluation is an outcomes chain based on a theory of change, combined with contribution analysis.

The key reasons for adopting this methodology are that it supports:

- Measurement of short term and intermediate outcomes as well as longer term impact. This is important, given the rapid release of many decision support tools such as mobile apps, and the time it takes for them to gain reach and traction within the vast and complex healthcare system. Showing change in these intermediate outcomes is a predictor of longer term change in service and patient outcomes.
- A 'realistic' approach to evaluation methodology. This means focusing on 'how' rather than 'if' impact is achieved. It puts the emphasis on analysis of the factors that facilitate and inhibit successful implementation in complex, real-life settings of interventions such as decision support or the evidence-based interventions incorporated in apps, whose efficacy has already been demonstrated by research.
- Recognising the influence of environmental factors and constraints – e.g. competing change initiatives, barriers to change at management level - beyond the project control.
- Demonstrating that a given intervention has contributed to a change in practice, rather than the classic attribution approach which requires controlling all environmental variables to show that improvement is solely attributable to the intervention of interest. In the real world, rather than experimental situations, this level of control is often not possible.
- An iterative approach to implementation, as required for effective roll-out of mobile apps. Evaluation takes place throughout the project, continuously measuring indicators at the different levels of the framework and testing assumptions about impact. This means that where impact is not achieved at the predicted level, the project managers can investigate the reasons and adapt the intervention or implementation approach accordingly.
- Continued opportunity to employ classic methods for assessing change in practice and outcomes such as before and after evaluation, case control analysis, interrupted time series analysis, etc. However, an outcomes chain approach reduces dependency on demonstrating change in practice using such methods in a short timescale. The reality is that using these methods to show impact on practice often require time for a complex intervention - to become stable in delivery and for the implementation approach to reach high fidelity and scale.

Outcomes chain and contribution analysis approaches have a strong pedigree and credibility in the NHS in Scotland. They are used by Healthcare Improvement Scotland and Health Scotland to evaluate their improvement programmes, and were used to evaluate the successful pilot of decision support in diabetes in NHS Tayside and West Lothian. These approaches also form the basis of the Return on Investment methodology promoted by NES to evaluate the impact of educational interventions.

This approach is flexible enough to be used across all decision support projects, enabling a cumulative assessment of impact across the whole programme.

How does the outcomes chain approach and contribution analysis work in practice?

As implemented in other decision support and improvement projects, the approach involves defining a logical sequence of interdependent levels of impact. Indicators and data gathering methods are identified for each level. As shown in the figure and table below, lower levels of impact are largely under the control of the project managers, while higher levels of impact are more subject to influences in the external environment.

Measures of impact are taken throughout the project, starting at the lower levels, and testing the underpinning risks and assumptions so that the implementation approach can be adapted if required to maximise impact.

Typically, generic levels of impact and indicators are along the following lines:

Level of impact	Examples of indicators	Examples of how indicators would be gathered
Impact under <i>direct influence</i> of project – environmental factors <i>may</i> influence success.		
Reach	Numbers of accesses, visitors, etc from target groups	Online statistics for mobile app
Reaction	Stakeholder reports of satisfaction	Questionnaire, interview
Capability	Change in knowledge, skills, attitudes of users	Before and after study - questionnaire, assessment or interview Gathering of case studies, stories
Impact under <i>indirect influence</i> of project – environmental factors <i>very likely</i> to influence success		
Decisions and practice	Change in specific clinical decisions – e.g. frequency of referral, change in prescribing etc.	Gathering of case studies, stories. Before and after analysis Case control analysis Interrupted time series etc
Service delivery	Change in service model	Before and after process analysis.
Patient outcomes	Clinical indicators – e.g. time in hospital, number of hospital visits,	Before and after analysis Case control analysis

	improvement in clinical indicators - blood pressure, HBA1C levels, etc.	
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The logical argument built into the outcomes chain means that, even if it is not possible to demonstrate significant change in decisions and practice in the short timeframe of a pilot project, it is still possible to show that high levels of clinician usage of decision support (reach), positive engagement (reaction), change in their knowledge and attitudes about the improvement topic and the use of decision support, together with some case studies of change in practice, form a sound basis for future broader impact on practice and outcomes.

Figure 1: Outcomes chain model

